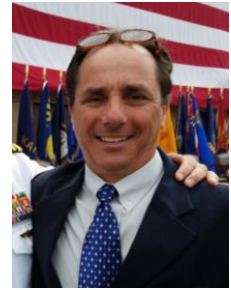


Joseph A Curcio

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Security Clearance

Secret

Qualification Highlights

Strong Leadership - Successfully Led team of engineers and technicians in developing multi-million dollar advanced watercraft.

Multi-Faceted in Engineering/Business - Skills range from high level proposal writing and contract negotiations to hands-on design and fabrication.

Entrepreneurial - Launched marine technology and consulting company, securing multiple DoD and commercial contracts.

Innovative - Developed and patented advanced drag reduction technology, man overboard tracking system and additional technology design achievements.

Summary

[MIT Autonomous Underwater Vehicles Lab](#) and [Laboratory for Autonomous Marine Sensing Systems](#). Design, Development and operation of early Odyssey Class AUVs.

Led team in design and development of [CETUS](#), world's first production level AUV capable of hovering and station keeping (contract to Lockheed Martin).

Development of [SCOUT](#), a low cost autonomous surface platform used in multiple DoD funded deployments. Software development in adaptive behavior with multiple vehicles addressing [COLREGS](#) (Collision prevention) requirements using autonomous and robotic vehicles. This work was performed in conjunction with [Michael Benjamin](#) from NUWC/Newport using [MOOS-IvP](#) autonomy software.

Chief Engineer aboard several large sailing vessels including two of the historic [J-Class](#) yachts, [Endeavour](#) and [Shamrock V](#).

US Patent Number [9,168,978](#) for Venturi based drag reduction system for increasing propulsion efficiency of marine vehicles.

US Patent Number [6,414,629](#) for the development of a GPS based tracking system intended for locating persons lost at sea. See [Outside Magazine, March 2007 issue](#).

Education

Massachusetts Institute of Technology, Cambridge, MA
Master of Science in Ocean Systems Management, 1995.
Master of Engineering in Ocean Engineering, 1995.

University of Vermont, Burlington, VT
Bachelor of Science in Mechanical Engineering, 1985.

Professional experience

1999 – 2010 and 2016 - Present: [Robotic Marine Systems, LLC](#), Gray, Maine.

President: Startup company developing and manufacturing low cost Autonomous Surface Craft for an array of customers and applications. Providing engineering analysis and design on a variety of marine applications including autonomous vehicles, remote monitoring systems, aquaculture applications and unmanned navigation and control. Awarded several DoD contracts through SBIR, BAA and other programs.

Lead Project Engineer constructing 52 meter sailing sloop at Derecktor's Shipyard, Bridgeport CT. Consultant on several other yacht restoration projects.

ARPA-e contract award for offshore micro-algae harvesting. Development of vessel control and autonomy suite.

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Professional experience continued

2010 – 2016: [Juliet Marine Systems, Inc.](#) Portsmouth, NH.

Vice President, Research and Development: Responsible for overseeing and managing all engineering aspects of a unique SWATH vessel employing a novel propulsion system utilizing air as a mechanism to reduce hull drag.

2003 – 2010: Massachusetts Institute of Technology, Ocean Engineering.

Research Engineer: Project management, design, development and operation of Autonomous Surface Craft and Autonomous Underwater Vehicles. Focus on multivehicle autonomy optimization addressing two primary areas of research pertinent to US Navy operations; MCM (Mine Countermeasure) and ASW (Anti Submarine Warfare), using autonomy behaviors including Moving Long Baseline (MLBL) employing acoustic communications for improved underwater navigation.

1993 – 1999: Massachusetts Institute of Technology, Sea Grant College Program. Research Engineer: Project manager and lead AUV mechanical designer; design and development of Autonomous Underwater Vehicles. Numerous at sea deployments including five weeks in Labrador Sea aboard the R/V Knorr, developing and testing deep water autonomous docking system and advanced navigation of AUVs. Chief Scientist during ONR funded PLUSNet (Persistent Littoral Undersea Surveillance Network) 2006 and 2007 field exercises, successful demonstration of remote high-level collaborative field control of multiple autonomous assets (NAFCON) and numerous additional in-water deployments.

Lead ASC Engineer in AOFNC CADRE (Cooperative Autonomy for Distributed Research and Exploration) at Panama City AUVFest '07 using Moving Long Baseline (MLBL) navigation and a suite of autonomous underwater vehicles, autonomous surface craft and HFGW (High Frequency Ground Wave) radios. First successful in-water demonstration of multiple autonomous vehicles detecting, classifying and localizing "objects of interest" in real time.

1991 – 1993: J-Class Management, Newport, Rhode Island.

Chief Engineer: J-Class sloops Endeavour and Shamrock-V servicing and maintaining all shipboard equipment.

1989 – 1991: Parker-Hannifin Corporation, Nichols Motor Division, Gray, Maine.

Applications Engineer: Hydraulic motors, pumps and operating systems.

1988 – 1985: Kelsey-Hayes Company, Romulus, Michigan.

Product and Sales Engineer: Automotive brake systems and electro-mechanical sensors.

Patents

U.S. Patent 9,327,811 High Speed Surface Craft and Submersible Craft

U.S. Patent 9,168,978 High Speed Surface Craft and Submersible Craft

U.S. Patent Application 20150013586 High Speed Surface Craft and Submersible Craft

U.S. Patent Application 20150000584 High Speed Surface Craft and Submersible Craft

U.S. Patent 6,414,429 Tracking Device

J.A.Curcio Publication List

- Curcio, J.A., "Autonomous Ocean Vehicles, Subsystem and Control", *Springer Handbook of Ocean Engineering*, Springer Dordrecht Heidelberg London New York, 2016. 517-526. Print.
- Curcio, J., Schneider, T., Benjamin, M., Patrikalakis, A., "Autonomous Surface Craft Provide Flexibility to Remote Adaptive Oceanographic Sampling and Modeling," MTS/IEEE OCEANS Conference, Quebec, Canada, Sept. 2008. [\(pdf\)](#)
- Shafer, A.J., Benjamin, M.R., Leonard, J.J., Curcio, J.A., Patrikalakis, A., "Autonomous Cooperation of Heterogeneous Platforms for Sea-Based Search Tasks", in Proceedings of MTS/IEEE Oceans 2008, Quebec City, Canada, September 2008. [\(pdf\)](#)
- Benjamin, M., Curcio, J., Leonard, J., Newman, P., "Navigation of Unmanned Marine Vehicles in Accordance with the Rules of the Road" , in Proceedings of the 2006 IEEE International Conference on Robotics and Automation (ICRA), Orlando, Florida, May 2006. [\(pdf\)](#)
- Don Eickstedt, Michael Benjamin, Ding Wang, Henrik Schmidt, Joseph Curcio, "Behavior Based Adaptive Control for Autonomous Oceanographic Sampling" to appear, International Conference on Robotics and Automation (ICRA), Rome, Italy, April 2007. [\(pdf\)](#)
- Willcox, S., Goldberg, D., Vaganay, J., Curcio, J., "Multi-Vehicle Cooperative Navigation and Autonomy with the Bluefin CADRE System", in Proceedings of IFAC (International Federation of Automatic Control) Conference, Lisbon, Portugal, 20-22 Sept, 2006. [\(pdf\)](#)
- Curcio, J., McGillivray, P., Fall, K., Maffei, A., Schwehr, K., Twigg, B., Kitts, C., Ballou, P., "Self-Positioning Smart Buoys, The "Un-Buoy" Solution: Logistic Considerations using Autonomous Surface Craft Technology and Improved Communications Infrastructure," in Proceedings of IEEE Oceans 2006, pages 1-5 ,September 2006. [\(pdf\)](#)
- Benjamin, M., Curcio, J., Leonard, J., Newman, P., "Protocol-Based COLREGS Collision Avoidance Navigation Between Unmanned Marine Surface Craft," *Journal of Field Robotics*, Vol 23, No. 5, May 2006. [\(pdf\)](#)
- Benjamin, M., Curcio, J., Leonard, J., Newman, P., "Navigation of Unmanned Marine Vehicles in Accordance with the Rules of the Road," International Conference on Robotics and Automation (ICRA), Orlando, FL, pages 3581-3587, May 2006. [\(pdf\)](#)
- Curtin, T., Crimmins, D., Curcio, J., Benjamin, M., Roper, C., "Autonomous Underwater Vehicles: Trends and Transformations," *The Marine Technology Society Journal*, vol. 39, no. 3, pages 65-75, Fall 2005. [\(pdf\)](#)
- Curcio, J., Leonard, J., Vaganay, J., Patrikalakis, A., Bahr, A., Battle, D., Schmidt, H., Grund, M., "Experiments in Moving Baseline Navigation using Autonomous Surface Craft", in Proceedings of MTS/IEEE Oceans 2005, pages 730-735 vol.1, September 2005. [\(pdf\)](#)
- Curcio, J., Leonard, J., Patrikalakis, A., "SCOUT – A Low Cost Autonomous Surface Craft for Research in Cooperative Autonomy", in Proceedings of MTS/IEEE Oceans 2005, pages 725-729 vol. 1, September 2005. [\(pdf\)](#)
- Vaganay, J., Leonard, J., Curcio, J., Willcox, S., "Experimental Validation of Moving Long-Baseline Concept", AUV 2004 IEEE/OES, pages 59-65, June 2004. [\(pdf\)](#)
- Benjamin, M.R., Curcio, J.A., "COLREGS-Based Navigation in Unmanned Marine Vehicles", AUV 2004 IEEE/OES, pages 32-39, June 2004. [\(pdf\)](#)
- Curcio, J.A., Bellingham, J.G., Hover, F.S., "CETUS: Design of a production AUV," *Sea Technology*, Vol. 39, No. 12, December, 1998. [\(pdf\)](#)
- Lemoine, P.J., Marcus, H.S., Curcio, J. A., "Improving Performance in the Navy's Acquisition Process Through the Improved Use of Teams", *Journal of Ship Production*, Volume 13, No. 4, November 1997.